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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,792	01/26/2004	Kenneth C. Johnson	TWI-33010	9766
28584	7590	08/25/2005	EXAMINER	
STALLMAN & POLLOCK LLP SUITE 2200 353 SACRAMENTO STREET SAN FRANCISCO, CA 94111			WACHSMAN, HAL D	
			ART UNIT	PAPER NUMBER
			2857	

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/764,792

Applicant(s)

JOHNSON, KENNETH C.

Examiner

Hal D. Wachsman

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BM

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1-26-04</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. The Abstract is objected to because the Abstract contains purported merits (i.e. "...beyond the accuracy provided by the database", "...beyond the accuracy provided by interpolation"). Appropriate correction is required.
2. Page 1, line 3, of the specification states "Inventors:..." however there is only one inventor in the instant application. Page 8, line 2, of the specification cites "the resulting the output field.." however was this intended to be "the resulting output field.". Page 8, line 26, of the specification cites "bet-fit strategy" which it appears should be "best-fit strategy". In addition, it appears that a semicolon is missing at the end of line 7 of claim 7. Appropriate correction is required.
3. The listing of references in the specification (see pages 1, 2, 4, 10 of the specification) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1, line 3, cites "the resulting output field" which lacks antecedent basis. This same type of problem also occurs in claim 7, line 3. Claim 1, line 8, cites "associated measurement parameters" which is vague with respect to what type of measurement parameters are being referred to here and is vague with respect to how exactly these measurement parameters are associated with the pre-computed optical response. This same type of problem also occurs in claim 1, lines 10 and 13, claim 4, line 3, claim 7, lines 7, 10, 12-13, claim 10, line 3, claim 15, lines 8, 10. Claim 1, line 9, cites "pre-computed responses" however is this referring to pre-computed optical responses ? This same type of problem also occurs in claim 7, lines 8-9, claim 15, line 7. The last step of claim 1 "iteratively evaluating a theoretical model to generate a theoretical optical response and associated measurement parameters" dangles in the claim because there is a lack of a clear connection between this step and the searching and interpolating steps which preceded it. This same type of problem also occurs with the last feature of claim 7, "a theoretical refinement module... and associated measurement parameters" in which this feature dangles in the claim. Claim 4, line 2, cites "model evaluation operations" which lacks clear antecedent basis. This same type of problem also occurs in claim 10, line 2. Claim 8, line 2, cites "the theoretical model" however the antecedent basis is "theoretical refinement model". This same type of problem also occurs in claim 9, line 2. Claim 11 first states "A device as recited in claim 7...using reduced multicube interpolation." However, beneath this in

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claim 11 are a series of method steps such as "illuminating the sample with an incident field;" , "measuring the resulting output field..." etc. Because of this there is confusion with respect to what exactly constitutes the scope of claim 11 i.e. is the scope of the claim just the beginning of the claim which is a dependent claim of a device claim and if so were the method steps underneath this intended to be part of a independent method claim ? Claim 15, line 5, cites "the theoretical optical responses" which lacks clear antecedent basis.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1-4 and 6-10 are rejected under 35 U.S.C. 102(a) as being anticipated by Sezginer et al. (WO 02/065545 A2).

As per claim 1, Sezginer et al. (Abstract, page 3 lines 27-29) disclose "illuminating the sample with an incident field" and "measuring the resulting output field to determine an optical response of the sample". Sezginer et al. (Abstract) disclose generating measurement parameters that correspond to the measured optical response. Sezginer et al. (figure 20, page 43 lines 28-31) disclose "searching a database to locate a pre-computed optical response and associated measurement

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parameters". Sezginer et al. (figure 20, page 32 lines 1-4, page 44, lines 1-4) disclose "interpolating between pre-computed responses in the database....associated measurement parameters". Sezginer et al. (Abstract, figure 19, page 9 lines 4-11, page 25 lines 4-7, page 31 lines 10-34, page 34 lines 18-22, page 40 lines 17-30) disclose "iteratively evaluating a theoretical model to generate a theoretical optical response and associated measurement parameters".

As per claim 2, Sezginer et al. (Abstract, figure 19, page 9 lines 4-11, page 25 lines 4-7, page 31 lines 10-34, page 34 lines 18-22, page 40 lines 17-30) disclose the feature of this claim.

As per claim 3, Sezginer et al. (figure 20, page 32 lines 1-4, page 44, lines 1-4) disclose the feature of this claim.

As per claim 4, Sezginer et al. (Abstract, figures 19, 20, page 9 lines 4-11, page 25 lines 4-7, page 31 lines 10-34, page 32, lines 1-4, page 34 lines 18-22, page 40 lines 17-30, page 43 lines 28-31, page 44 lines 1-4) disclose the feature of this claim.

As per claim 6, Sezginer et al. (Abstract, figures 19, 20, page 9 lines 4-11, page 25 lines 4-7, page 31 lines 10-34, page 32, lines 1-4, page 34 lines 18-22, page 40 lines 17-30, page 43 lines 28-31, page 44 lines 1-4) disclose the feature of this claim.

As per claim 7, Sezginer et al. (Abstract, page 3 lines 27-29) disclose "a measurement system for illuminating the sample...to determine an optical response of the sample" and "a processor for generating measurement parameters that correspond to the measured optical response, the processor configured...". Sezginer et al. (figure 20, page 43 lines 28-31) disclose "a database searching module...and associated

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measurement parameters". Sezginer et al. (figure 20, page 32 lines 1-4, page 44, lines 1-4) disclose "a interpolated refinement module...to generate an interpolated optical response and associated measurement parameters". Sezginer et al. (Abstract, figure 19, page 9 lines 4-11, page 25 lines 4-7, page 31 lines 10-34, page 34 lines 18-22, page 40 lines 17-30) disclose "a theoretical refinement module for iteratively evaluating a theoretical model...and associated measurement parameters".

As per claim 8, Sezginer et al. (Abstract, figure 19, page 9 lines 4-11, page 25, lines 4-7, page 31 lines 10-34, page 34 lines 18-22, page 40 lines 17-30) disclose the feature of this claim.

As per claim 9, Sezginer et al. (figure 20, page 32 lines 1-4, page 44, lines 1-4) disclose the feature of this claim.

As per claim 10, Sezginer et al. (Abstract, figures 19, 20, page 9 lines 4-11, page 25 lines 4-7, page 31 lines 10-34, page 32, lines 1-4, page 34 lines 18-22, page 40 lines 17-30, page 43 lines 28-31, page 44 lines 1-4) disclose the feature of this claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sezginer et al. (WO 02/065545 A2) in view of Johnson et al. (US 2002/0038196 A1).

As per claim 5, Johnson et al. (paragraphs 0088-0097) teach the feature of this claim. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Johnson et al. to the invention of Sezginer et al. as specified above because as taught by Johnson et al. (paragraph 0088) improved interpolation accuracy can be obtained by using a multi-cubic, rather than multilinear, interpolating function in each grid cell.

10. The following references are cited as being art of general interest: Johnson et al. (6,768,967) which disclose a database interpolation method, Opsal et al. (6,704,661) which disclose real time analysis of periodic structures on semiconductors, Aikens et al. (6,898,596) which disclose library data sets and Chang et al. (6,867,866) which disclose CD metrology analysis.


11. No claims are allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal D. Wachsman whose telephone number is 571-272-2225. The examiner can normally be reached on Monday to Friday 7:00 A.M. to 4:30 P.M.:

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Hal D Wachsman
Primary Examiner
Art Unit 2857

HW
August 20, 2005